ICANN79 | CF – Joint Session: ICANN Board and RSSAC
Tuesday, March 5, 2024 – 9:00 to 10:00 SJU

LISA SAULINO: Hello everyone, my name is Lisa Saulino and I am the participation manager for this session. Welcome to the joint session with the ICANN Board and the Root Server System Advisory Committee. Please note that this session is being recorded and follows the ICANN expected standards of behavior. Interpretation for this session will include English, French, Spanish, Chinese, Russian, and Arabic. Please state your name for the record and the language you will speak if speaking a language other than English. Please speak at a reasonable pace. This discussion is between the ICANN Board and the RSSAC. Therefore, we will not be taking questions from the audience. All are welcome to use the chat. Please note that the private chats are only possible among the panelists in the Zoom webinar format. Any messages sent by panelists or a standard attendee to another standard attendee will also be seen by the session's host, co-host, and other panelists. With that, I will hand the floor over to ICANN Board Chair Tripti Sinha.

TRIPTI SINHA: Thank you, Lisa, and welcome, everyone, to today's first bilateral meeting with the RSSAC and the Board. This is one of my favorite meetings because it's my stomping ground, and this is where I started when I came into the ICANN ecosystem. So I'm from the Board. This will be chaired by Wes Hardaker, so I'm going to turn it over to Wes.

WES HARDAKER: Great. Thanks very much. It's my favorite meeting, too, because I'm not conflicted for once as I start every meeting saying that because it's the only time I don't have to run back and forth a lot. So thanks, everybody, for coming. Why don't we go ahead and start with a quick tour de table to make sure that everybody gets the chance to figure out who everybody is and which side of the roles we fall on. I'll start. I'm Wes Hardaker. I'm the Root Server Operational Manager for the University of Southern California. We'll go left and around the table.

JEFF OSBORN: My name is Jeff Osborn. I'm the RSSAC Chair, and I'm President of the company ISC, in my day job.

KEN RENARD: Good morning. Ken Renard, RSSAC Vice Chair, Root Server Operator at the Army Research Lab.

ROBERT CAROLINA: My name is Robert Carolina. I am a member of RSSAC, and I work with a Root Server Operator, ISC, where I'm General Counsel.

JAMES GALVIN: I am James Galvin. I am SSAC's liaison to the ICANN Board.

BRAD VERD: Brad Verd, RSSAC, Verisign.

LARS-JOHAN Liman: Lars-Johan Liman, RSSAC member from Netnod.

KARL REUSS: RSSAC, Root Server Operator from the University of Maryland.

MATT LARSON: Matt Larson. I'm one of the ICANN representatives on RSSAC.

HANS PETTER HOLEN: Hans Petter Holen, and I'm the CEO of RIPE NCC, one of the Root Server Operators.

CHRISTIAN KAUFMANN: Christian Kaufmann, ICANN Board member, and I do love root servers.

SARAH DEUTSCH: Hi. Sarah Deutsch. I'm Chair of the Board Governance Committee.

SALLY COSTERTON: Sally Costersen. I'm Interim President and CEO of ICANN.

TRIPTI SINHA: And Tripti Sinha, Chair of the ICANN Board, and in my day job, during my copious free time, I run the root server system and other things.

WES HARDAKER: Yes, some of us have too many hats. I should have mentioned, actually, that I'm the RSSAC liaison to the ICANN Board as well. There are other Board members and root server operators in the audience. Thank you all for attending. For those that are in the audience, if you want to make a comment on a particular topic, do feel free to find a microphone either roving or at the table. Just walk up. This meeting will likely actually be a little bit shorter than possibly the time allotted. We don't have a huge number of topics today, but the ones that we do have are actually rather important. So we're going to start with the topics that RSSAC wanted to bring to the discussion in particular and get feedback from ICANN and the ICANN Board about. So the two topics from RSSAC are related, so I'm going to go ahead and read them together, and Tripti, you can decide how you're going to respond to them in part or together, which is what is the primary point that ICANN needs to get across at WSIS+20? RSSAC has had a lot of conversations about how can we assist, and that's the nature of the second question is, is there a role for RSSAC? You know, we are primarily a technical body, and are there ways that we can help with the issues surrounding WSIS+20? So with that, I'll turn it over to Tripti. Go ahead.

TRIPTI SINHA: Thank you, Wes, and you started off by saying we're just a technical body, but that's the crux of all of this. You are indeed a technical body in a very important role that you play here. So just to take this back in time, I guess 20 years ago now, individuals, different entities in the world came together and ratified an agreement that Internet governance and the operations of these kinds of infrastructures should happen with a multistakeholder body.

Now, lately, there's been a movement, a drift, to change the paradigm and rest that responsibility on multilateralism. And the WSIS is reviewed every 10 years. I believe they were reviewed in 2015, and now the next review is coming up next year, and there is a concern that this paradigm will change. And there's also an effort in the United Nations to no longer recognize the technical community and just sort of couple them and fold them into civil society.

So what the RSSAC and other technical communities can do is continue to solidify your posture and position when it comes to running any technical infrastructure. The world needs to understand how closely we collaborate and communicate and coordinate our activities so that we are not forgotten. And indeed, if policies are articulated and developed, that the technical community is not left out, because oftentimes legislation and regulation is made in the absence of technical communities. We don't understand how the underlying infrastructure and protocols and standards work. For example, as many of you know, there's also been an effort to, hey, can we legislate BGP? We just don't want those kinds of things to happen.

So with that framework, I'm going to open the floor for discussion and questions.

WES HARDAKER: Does anybody have comments or discussions? I will offer one point of wisdom that has come up in two meetings this week, that the technical community often has to be the body that implements particular policies when they get down to regulating BGP or anything else. And without a proper voice in those discussions, it's entirely possible that policies can

be created that are actually not implementable. So that's actually been one of the themes that I've seen this week with respect to getting voices from the technical community. Does anybody have follow-on thoughts or questions about WSIS+20 and the RSS as a whole?

I will offer one other point of wisdom, since nobody else is talking, that RSSAC has heavily documented the fact that RSOs ourselves, when we implement the RSS, it's done in a very independent nature, where there is no singular voice that is superior to another, which is, I think, one of the primary goals of a multistakeholder model in the first place, is that everybody gets a voice and an opinion. And it may be another example occasionally to turn to if that turns out to be helpful in ICANN's discussions with other -- it's a success story, right? It always works.

TRIPTI SINHA: Absolutely. And one other thing is that the technical body, and in particular the root service system operators, we do our job quietly and apolitically. And we stay above the fray, the political fray. We don't disenfranchise or take a view on any political posturing, positioning, and so forth, because to us, when it comes to ensuring that the Internet works, we just make sure it works and we're apolitical. We don't want to disenfranchise anybody in the world.

UNIDENTIFIED SPEAKER: Thank you for answering for RSSAC, [inaudible].

UNIDENTIFIED SPEAKER: You really do wear both hats.

WES HARDAKER: All right. Does anybody else have comments or questions? Edmon, please.

EDMON CHUNG: I guess I just want to add one thing. I guess one of the important developments in RSSAC or related is the governance structure, the governance working group that's ongoing right now. That is, I think, going to add a lot to the points that ICANN can make across during this process, because that is a piece, I think, that is important, and how that also embraces the multistakeholder approach that we believe in here is going to add to the ability for the entire ecosystem to make the point across, as Tripti mentioned, the importance of the technical community to be part of the -- you know, not just the consultation body, but the decision-making process. So I think that's one of the things not trying to rush anything there, but I think movement there would be very important.

WES HARDAKER: Thanks, Edmon. You know, you are, I think, absolutely correct in your viewpoint. I will, just for the sake of being very clear, RSSAC does not represent the GWG. The GWG, the governance working group, has a lot of constituencies represented in it, so we're not able to speak for the GWG, because we would be inappropriate in doing so when there's a lot of other bodies that contribute to that. I think, Jeff, did you have a comment?

JEFF OSBORN: Yeah, I just wanted to thank Tripti for her clarification on our question. Thanks very much. I've had the discussions personally and private as well, and I think we're positioned to be as helpful as we can in whatever we can do, and we'd like to keep the dialogue open if there is anything additionally we can do in the broader world. We are a very independent bunch, but we also show up at places like this, and so to the degree we can help, be helpful. We're here to help.

TRIPTI SINHA: I'd like to make one more clarification. We come today around this table as RSSAC, which is an ICANN construct, but as you just mentioned, we are 12 distinct entities as RSOs, and so that's what we need to show the communities that the RSOs, these 12 distinct entities, coordinate, communicate talk to each other, and there's a very good, strong relationship in how we make all this work. It's akin to what happens in the RIR world as well, where you've got five entities that are coordinating.

WES HARDAKER: All right. Thank you very much. Does anybody else have comments or questions on that topic? All right. Seeing none, why don't we go ahead and go on to the inverse of the question set. So if you could go to the next slide. I'm not sure who's driving over. Thank you very much.

So there's only one question today from the ICANN board to RSSAC, and the question is, how do political events affect the RSOs and the RSS, and similarly, how does the RSS adapt to the changing external environment? And I think Jeff will take the first answer at that.

JEFF OSBORN: Thanks, Wes. As chair of the RSSAC, as we've said, we are 12 very different organizations and have our opinions, but we're really good at drafting documents that we can all buy into. So instead of risking putting my own opinion too much into this, I'm literally going to read what we came up with, because I think it's really a good response to this question. The root server system is extremely resilient. In short, the root server system has been designed to respond to events of any type in an automated fashion to ensure constant, resilient, and reliable service availability. It has a proven track record of never having a service outage, regardless of any external events and regardless of size and type. Global events of all types, including weather, political, physical conflicts, and natural disasters have at worst resulted in automatic traffic shifts from one RSS instance to another in the global network of 1,758, as of last week, redundant instances. Additionally, both the RSOs and community have extensive and redundant monitoring systems to ensure we receive immediate notification of any disruptions and can act accordingly in an event, if an event ever has a global impact on the RSS. In other words, we view any outside problem as simply a problem we route around.

WES HARDAKER: Thank you very much. Yes, we're a technical infrastructure, and it doesn't matter what problem might occur, and it doesn't matter really the type, because we will figure out a way to route around it. And not only that, the way we've stood things up, it's all automated. So it happens automatically. There's an automatic backup system

essentially in place with the entire RSS. Does anybody have follow-on questions or comments related to that question or answer?

UNIDENTIFIED SPEAKER: Well, in the nature of the question, you asked us how do political events affect us. And the silence is actually an answer to that question, right? We do not comment on that. They do not affect us. They're not supposed to affect us. We're not supposed to be a tool in the political world. So it sounds a bit like a joke that we're silent, but that's by design.

WES HARDAKER: Yeah, there are times that conflicts cause outages in cables or in other things, but so do hurricanes, right? To us, it's a problem to deal with at a technical level. It's like, how do we ensure global communication continues to happen regardless of any particular event that may affect physical infrastructure?

TRIPTI SINHA: I was just going to say, be that as it may, that your silence is golden, in this particular case, you have time on your hands. Would you like to talk about something else?

WES HARDAKER: So I think we'll call that as any other topics, any other business before the group. Does anybody have additional topics or thoughts between RSSAC and the board? We often do have short meetings because we tend to agree a lot. Maarten, please.

MAARTEN BOTTERMAN: Hey, guys. You don't have anything else to talk about. Two things. One thing is we have embarked and started looking into how we can optimize operations in a more ecological way. And I'm not talking about greenwashing, but about where can you really make a difference? Are you considering that yourself and share experiences? I think our intent is to share these experiences from the ICANN side.

The other thing is strategic plan. Anything we need to think about from a root server perspective for five years from now? That's an excellent double question. I'll take them one at a time so that we don't intermix them a little bit. If I forget one, remind me. So let's start with the green energy use. I know in the IETF we're doing a lot of things related to measuring, and we've talked about that on the ICANN side, too. Does anybody want to comment on effective use of things within the root server system? Rob?

ROBERT CAROLINA: Yes. Thank you. It's Robert Carolina with RSSAC. The danger of my response is that it's made up on the spot. And that is if we look at the energy efficiency of something like the root server system, I think the question has to be seen in the overall environment of the scale and scope of the root server system compared with other components of the DNS. So as a reminder for those who may not know, there are millions or tens of millions of recursive resolver machines all around the world answering trillions or hundreds of trillions of questions a day. There are more than 300 million sets of domain name data at authoritative servers, and how many authoritative servers around the

world, unknown but very large. Each of the 1,700 TLDs is required to maintain a very large data set of every single domain name registered, and those operate on a large number of servers all around the world, and each TLD will operate multiple servers.

By comparison, within the root server system, we're looking at a very small data set of addresses for 1,700 TLDs, very flat small data set compared to many others, and we're looking at a total of 1,758 server instances dotted in places around the world. I mention those numbers merely to suggest that the amount of electricity draw or the amount of power draw to keep the RSS functioning is extraordinarily limited compared to others in the authoritative and the recursive world, and I'm sure that we will benefit from whatever efforts are being driven by people who develop equipment in that world, and I have every confidence that we will follow those trends. I doubt that anyone will be able to measure the impact of what we do.

WES HARDAKER: All right. Thank you. I have comments, but Jeff, please go ahead.

JEFF OSBORN: To give an actual case for what it's worth, we previously ISC, as one of the root server operators, previously took half a rack of equipment and many thousands of watts of consumption, and we're currently down to a 1U Dell unit that I think is about 220 watts. So we've literally dropped an order of magnitude over the last half a decade or so, and I think that's pretty consistent. Coming up with the total numbers and nominal numbers on this, as Rob has said, we're a pretty small set, but it would

be interesting to quickly do the math and come up with our 1,700-ish instances at a couple of hundred watts apiece are a shockingly small drop in the total energy consumption world of the DNS, if you include all of the resolvers, all of the machinery out there. We're a pretty small piece.

WES HARDAKER: All right. I know one of the advents of -- a couple of things. So one, many root server operators, actually, when we say there's 1,758 instances, there's actually more computers involved in a lot of those. Those are actually sometimes single sites with more than 1U. There's multiple machines. At our root server, we actually have multiple back ends. And the good thing is that CPU scaling and things have come a long way, where power is reduced when load is not high until it's really needed. We're a research university, and we do try and stand up new technologies when we can in a safe way. And one of the things that I've wanted to explore is better automatic scaling in general for power and things like that. So I think we're continuing to look for advances in that type of technology to help out. But I think you're right, that if you look at where we were 10 years ago, machines are a lot less power hungry now than they used to be. Anybody else have comments on that topic before we go into Maarten's other topic?

MAARTEN BOTTERMAN: By the way, these answers don't surprise me. I'm also participating in the IETF group that is looking into this. And there's different places in the Internet where more energy is used. Data centers is a totally different story, for instance. I do believe it's important that you also say

something about it in your communications, even if it is what you just said, like minimal difference, because the world out there is looking at the Internet and the world of Internet and thinking that they maybe need to do something about it. So let's make sure they understand us, that that was just the nature of that.

WES HARDAKER: Yep. Thank you very much. I know we did power measurements at our university a year or two ago to really figure out exactly what our power load was in certain places. But all right. Any other comments on green and power? Liman.

LARS JOHAN LIMAN: All the above said, when we at Netnod deploy new machines at new sites, the energy consumption is actually something that we try to take into account. It's a balance between the power that you need to provide from the machine to how much or how little power it can consume and at the end of the line also the cost. But the development is working in our direction. So more powerful machines get cheaper and they use less power. So it's heading the right way. But you are right that we should probably communicate that better. Thank you.

WES HARDAKER: Yeah. Power, latency and availability are all intrinsically linked. Yes. So do you have something?

TRIPTI SINHA: I was just going to say, yeah, I think power has almost become something that is under consideration constantly for technical organizations. And for those of us who run beefy routers in data centers that in turn may have an instance of a route there even the power consumption by the router is evaluated. And so we are constantly reducing our carbon footprint. But I think Maarten makes a good point. We should talk a little bit more about it as a constellation of instances that make up the route service system. We could do a better job.

WES HARDAKER: So I think that's a good bullet for future meetings and RSSAC or route ups. CK?

CHRISTIAN KAUFMANN: Well, I'm clearly not a root server operator at all by whatever definition. But I think what happens in the IT industry is you pay for the power; right? The electricity has a price. As prices go up in various regions and you consume them, you have a natural incentive to actually look at that. And that is what Tripti said; right? It's not just we do it for the environment, which I guess is a nice side effect, but most operations do it for cost reasons. So I think everyone who pays for electricity, buys routers or servers has quite a look on how much power do I consume and how much compute or transport or whatever do I get out of it. So I think it's a very natural thing companies in the environment do.

WES HARDAKER: That's definitely the case. I know major corporations have looked at decreasing their power in their data centers and stuff as a route server.

I think power is probably one of my lowest costs, but I'd say that. Without actually going to do the calculations—I have that data somewhere. Any other comments on that? All right. So let's then shift to Maarten's second topic, which is where does the RSS see itself in five years? I feel like we just landed in an interview, but it's actually a really good question because there's so many changes in front. So listing the topics that we may want to consider the next round of gTLDs will start producing more. I have said in every meeting that we have ever attended that the route server system has been ready for whatever round the gTLD wants to throw at it. We are not concerned about that. All of our machines can easily handle the expected load being brought around by the next round. We did publish a document about the rate of growth that we can accept, and it's I think far exceeds what we expect the program to actually produce, for example.

The other thing is we're always looking toward latency. We're always looking toward making availability happen, as we've already discussed and I think have answered that to some extent. Other people have thoughts on where you see yourselves in five years? We hope the GWG will conclude, and that will bring about another set of changes with respect to governance. Liman?

LARS-JOHAN LIMAN: Yes, I think trying to expand on the last thing you said, that hopefully we will see a root server structure, a root server framework that is more transparent and more accountable with this new framework that we're trying to develop, put in place. And I think that that will be good communication to the community here, but also to the wider

community that we talked about before regarding governance of the Internet as a whole. So I hope that will be a small contribution in the right direction there. Thank you.

TRIPTI SINHA: So essentially, Liman, my two takeaways from your comment is that we'll have a better framework of accountability five years from now. And what did you say about governance?

LARS-JOHAN LIMAN: The transparency of the new system will help reinforce and describe how the system works today, and that can be a help in balancing with other forces that want to operate the Internet in a different way.

TRIPTI SINHA: Yes. Okay. Thanks.

WES HARDAKER: I think one of the advantages of a multistakeholder model in general is that -- they don't have to, but they traditionally act in a more transparent manner a lot of the time. Anybody else have comments on that? Anybody else have any other business before the board and RSSAC?

TRIPTI SINHA: I'll ask Maarten's question a little bit differently. Apart from what Liman said, what else would you aspire to have done in five years from now?

How would your world look different? Anything aspirational. Hans doesn't like the question. He's frowning. All right.

WES HARDAKER: No, it is a good question. I think that one of the challenges that root server operators face is that we need to deploy a very stable service that is accessible to all. And the end result is we're often not the leaders in new technologies. We are the late deployment of things because the root server system has to be stable. So we don't deploy new DNS features as rapidly as possibly some of the other infrastructure under -- underneath in the entire tree. With some exceptions. You know, our root server has now actually deployed TLS support, but it's experimental and we've labeled it such and it's not production and you're welcome to try it. But it's unclear that the root server system as a whole will consider that a key metric in any time in the near future. And nor should it. We shouldn't deploy technologies that are not well proven. I think we took a long time to deploy Anycast to all of the root server operators because we were concerned that maybe Anycast shouldn't go everywhere. We were actually the last. So I'll state that we were the first in something and the last in something both. Rob, please.

ROBERT CAROLINA: I know it's going to sound trite and forgive me for saying it, but today we tell the world that the root server system has operated without operational failure for 40 years. In five years' time I hope we will be telling the world that we have operated the root server system without operational failure for 45 years. I think that's the highest aspiration we all agree on.

WES HARDAKER: I'm pretty confident that we will succeed in that. Yes, Jeff.

JEFF OSBORN: Rob took away my thunder a little bit. What I was going to say is in technology there's always something new and exciting. And I think the root server system is more like it's a light switch. You don't want to walk into the room and have a new light switch to figure out every week. The fact that it's a light switch, up is on, down is off, is really comforting for 40 years and should also be comforting for 45.

WES HARDAKER: Fair point. Fair point.

TRIPTI SINHA: You dream big. Thank you.

WES HARDAKER: A tripolar light switch is not in our future. All right. Anybody else have comments, questions for the board? Questions for RSSAC? So I think with that we will adjourn. That was actually -- we took more time than I was even thinking. So thanks for the additional questions from Maarten and Tripti and everybody else. It's always a joy to bring these two groups together because I'm finally integrated into both of them and they're both excellent sets of people. So it's like my friends meeting my friends. So thank you very much. We will call this meeting adjourned.

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